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FINAL PRODUCT/PROCESS CHANGE NOTIFICATION#16441B

Generic Copy

Issue Date: 12-Sep-2012

TITLE: NCS2200A, NCS2220A, NCP69x, NCP600 and NCV8560 Device Families Qualification at Gresham Wafer Fab

PROPOSED FIRST SHIP DATE: 12-Dec-2012

AFFECTED CHANGE CATEGORY(S): Wafer Fab Location

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office Shannon.Riggs@onsemi.com or Alan.Garlington@onsemi.com

SAMPLES: Contact your local ON Semiconductor Sales Office or Tim.Gurnett@onsemi.com or Bett.lofts@onsemi.com

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or Ken.Fergus@onsemi.com

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

ON Semiconductor is pleased to announce the Wafer Fab qualification for the Device families which are listed below. These device families are currently qualified at ON Semiconductor's Aizu wafer fab facility located in Aizu, Japan and are now qualified at ON Semiconductor's Gresham wafer fabrication facility located in Gresham, Oregon. Per the earlier announcement by ON Semiconductor, the Aizu Wafer fab is scheduled to be closed in the future which necessitates this transfer. Upon expiration (or approval) of this Final PCN, devices listed in this notice may be supplied by either wafer fab.

The Gresham wafer fab is compliant to ISO9001:2008, ISO/TS16949:2009, and ISO14001:2004.
All devices affected by this PCN are currently run on the Aizu ACMOS2 process. The same ACMOS2 process has been transferred to and successfully qualified at the Gresham wafer fab. No device design changes have been made. Device performance is the same for Aizu and Gresham-sourced devices.

All of these device families will continue to be assembled and tested in existing, qualified locations. No changes to packaging will occur as a result of this fab qualification.

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RELIABILITY DATA SUMMARY:

Devices used for New Wafer Fab Qualification: 3 Device families

Device	NCP303LSN30T1G	**Wafer Fab Site**	Gresham	Oregon, USA
Package	TSOP-5	**Assembly Site**	SBN	Seremban, Malaysia
MSL Level	MSL 1 @260°C	**Final Test Site**	SBN	Seremban, Malaysia
Technology	ACMOS 2			
Final Lead Finish	Pb free	**Package Code**	0670	

Device	NCV8560MNADJR2G	**Wafer Fab Site**	Gresham	Oregon, USA
Package	DFN 6 3*3	**Assembly Site**	SBN	Seremban, Malaysia
MSL Level	MSL 1 @260°C	**Final Test Site**	SBN	Seremban, Malaysia
Technology	ACMOS 2			
Final Lead Finish	Pb free	**Package Code**	0448	

Device	NCP5208DR2G	**Wafer Fab Site**	Gresham	Oregon, USA
Package	SOIC-8 NB	**Assembly Site**	OSPI	Carmona, Philippines
MSL Level	MSL 1 @260°C	**Final Test Site**	OSPI	Carmona, Philippines
Technology	ACMOS 2			
Final Lead Finish	Matte Sn	**Package Code**	0081	

Reliability Test Results:

The Gresham-sourced Device families were all qualified by similarity based on the successful platform qual of the ACMOS2 technology and qualification device data as follows:

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Device NCP303LSN30T1G AEC Grading level 1 – Operating T° grading: -40°C to +125°C

Test	Name	Test Conditions	End Point Req's	Read Point	(rej/ ss)	(rej/ ss)
					Qual Lot	Control lot
HTOL	High Temp Op Life	Ta = 125°C Tj = 125°C For **504 hrs**	c = 0, Cold, Room, Hot	**504Hrs** 1008 Hrs	0/80 (a) 0/80	0/80 0/80
ELFR	Early failure rate	Ta = 125°C For **48 hrs**	c = 0, Cold, Room, Hot	48hrs		0/800
PC-TC	Temp Cycle (units mounted on daughter card)	MSL1 preconditioning -65/+150 C, air to air For **500 cyc**	c = 0, Room, hot	**500 cyc** 1000 cyc	0/84 0/84	0/84 0/84
PC-UHAST	Unbiased HAST TEST	MSL1 preconditioning TA= +130C, RH = 85%, PSIG= 18.8, NO bias	c = 0, Room	**96 hrs**	0/84	0/84
PC-HAST	HAST TEST	MSL1 preconditioning TA= +130C, RH = 85%, PSIG= 18.8, bias	c = 0, Room, hot	**96 hrs**	0/84	0/84
SAT	SAT	MSL1@260°C (delamination on die)			0/5	0/5

HTOL	High Temp Op Life	Ta = 125°C Tj = 125°C For **504 hrs**	c = 0, Room, Hot	**504Hrs** 1008 Hrs		0/80 0/80
PC-TC	Temp Cycle (units mounted on daughter card)	MSL1 preconditioning -65/+150 C, air to air For **500 cyc**	c = 0, Room, hot	**500 cyc**		0/84
HTSL	High Temperature Storage Life Test	Ta=150°C	c = 0, Room	504Hrs **1008 Hrs**		0/80 0/80

					Qual Lot	**Control**
LU	Latch-up	Class II / 85°C	C=0, Room, hot	**LU+>200 mA** **LU ->200mA**	Pass Pass	Pass Pass
ESD	Electro-static Discharge	Human Body Model (HBM), Machine (MM) Charge device Model (CDM)	c = 0, Room, Hot	**Results**	**HBM : +/- 3.5kV** **MM : +/- 200V** **CDM : 600V**	**HBM : +/- 4kV** **MM : +/- 300V** **CDM : 600V**

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Device **NCV8560MNADJR2G** **AEC Grading level 1 – Operating T° grading: -40°C to +125°C**

#	Test	Name	Test Conditions	Read Point	(rej/ ss) Qual Lot	(rej/ ss) Control lot
ELFR	Early Life Failure Rate	TA = 125°C	c = 0, Room, hot	**48 hrs**		0/810
HTOL	High Temp Operating Live Test	TA = 104°C ; Tj=125°C	c = 0, Room, hot	504hrs. 1008 hrs	0/84 0/80	0/80 0/80
PC	MSL1 Preconditioning	3 IR @ 245 deg C	c = 0, Room		0/262	0/262
PC-UHST	Precon. - Unbias HAST	TA= +130C, RH = 85%, PSIG= 18.8	c = 0, Room	**96hrs**	0/84	0/84
PC-TC	Precon. - Temp Cycle	-65/+150 °C, Air to Air	c = 0, Room, hot	**500cyc** 1000 cyc	0/84 0/84	0/84 0/84
PC-HAST	Precond. - HAST	TA= +130C, RH = 85%, PSIG= 18.8, bias	c = 0, Room, hot	**96 hrs**	0/84	0/84
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/5	0/5
ESD	Electro-static Discharge	Human Body Model (HBM) Machin Model (MM)	c = 0, Room, hot	Results	4kV 200V	
LU	Latch-up	Class II	c = 0, Room, hot	Results	LU+>100mA LU->100mA	

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Device = **NCP5208DR2G**

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A (rej/ ss)	Lot B (rej/ ss)	Lot C (rej/ ss)	Control (rej/ ss)
2	HTOL	High Temp Op Life	TA = 125°C for 1008hrs	c = 0, Room	504 hrs **1008 hrs**	0/80 0/80	0/80 0/80	0/80 0/80	0/80 0/80
3	ELFR	Early Life Failure Rate	TA = 125°C	c = 0, Room	**48hrs**	0/800			
4	SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC MSL 1 @260°C	Per 12MSB 17722 C	Results	0/5	0/5	0/5	0/5
5	PC	Moisture Preconditioning	MSL 1 @ 260°C	c = 0, Room	After PC	0/240	0/240	0/240	0/240
6	UHAST-PC	Precond. Autoclave	TA= +130°C, RH = 85%, PSIG= 18.8, No bias	c = 0, Room	**96 hrs** 144 hrs	0/80 0/80	0/80 0/80	0/80 0/80	0/80 0/80
7	TC-PC	Precond. Temp Cycle	-65/+150°C air to air	c = 0, Room	**500 cycs** 1000 cyc	0/80 0/80	0/80 0/80	0/80 0/80	0/80 0/80
8	HAST-PC	Precond. HAST	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room	**96 hrs** 144 hrs	0/80 0/80	0/80 0/80	0/80 0/80	0/80 0/80

ESD	Human Body Model	All Families Pass 2000V
	Machine Model Pass	All Families Pass 200V

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ELECTRICAL CHARACTERISTIC SUMMARY:

Electrical characterization has been completed with no changes to the AC/DC specifications. ON Semiconductor recommends samples are obtained for application specific review. Data is available upon request.

Analysis of ESD capability resulted in some device specifications changing. The ESD specification for Machine Model (MM) will change from 400v to 200v for the following devices. The individual device data sheets will be changed accordingly.

NCP600 family
NCP603 family
NCP605 family
NCP606 family
NCP690 family
NCP691 family
NCP692 family
NCV8560 family
NCV8603 family
NCV8605 family
NCV8606 family

CHANGED PART IDENTIFICATION:

Devices with date codes of 2012 work week 50 or later may be sourced from either wafer Gresham or Aizu fab.

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List of affected General Parts:

NCS2200AMUT1G
NCS2220AMUT1G
NCP600MN130R2G
NCP600SN130T1G
NCP600SN150T1G
NCP600SN180T1G
NCP600SN250T1G
NCP600SN280T1G
NCP600SN300T1G
NCP600SN330T1G
NCP600SN350T1G
NCP600SN500T1G
NCP600SNADJT1G
NCP603SN130T1G
NCP603SN150T1G
NCP603SN180T1G
NCP603SN250T1G
NCP603SN280T1G
NCP603SN300T1G
NCP603SN330T1G
NCP603SN350T1G
NCP603SN500T1G
NCP603SNADJT1G
NCP605MN15T2G
NCP605MN18T2G
NCP605MN25T2G
NCP605MN28T2G
NCP605MN30T2G
NCP605MN33T2G
NCP605MN50T2G
NCP605MNADJT2G
NCP606MN15T2G
NCP606MN18T2G
NCP606MN25T2G
NCP606MN28T2G
NCP606MN30T2G
NCP606MN33T2G
NCP606MN50T2G
NCP606MNADJT2G
NCP690MN15T2G
NCP690MN18T2G
NCP690MN25T2G
NCP690MN33T2G
NCP690MN50T2G
NCP690MNADJT2G
NCP691MN15T2G
NCP691MN18T2G
NCP691MN25T2G
NCP691MN33T2G
NCP691MN50T2G
NCP691MNADJT2G
NCP692MN15T2G
NCP692MN18T2G
NCP692MN25T2G
NCP692MN33T2G
NCP692MN50T2G
NCP692MNADJT2G
NCV8560MN150R2G
NCV8560MN180R2G
NCV8560MN250R2G
NCV8560MN280R2G
NCV8560MN300R2G
NCV8560MN330R2G
NCV8560MN350R2G
NCV8560MN500R2G
NCV8560MNADJR2G
NCV8560SN130T1G
NCV8560SN150T1G
NCV8560SN180T1G
NCV8560SN250T1G
NCV8560SN280T1G
NCV8560SN300T1G
NCV8560SN330T1G
NCV8560SN350T1G
NCV8560SN500T1G
NCV8560SNADJT1G
NCV8603SN33T1G
NCV8605MN15T2G
NCV8605MN18T2G
NCV8605MN25T2G
NCV8605MN28T2G
NCV8605MN30T2G
NCV8605MN33T2G
NCV8605MN50T2G
NCV8605MNADJT2G
NCV8606MN15T2G
NCV8606MN18T2G
NCV8606MN25T2G
NCV8606MN28T2G
NCV8606MN30T2G
NCV8606MN33T2G
NCV8606MN50T2G
NCV8606MNADJT2G